

REMARKS

Claims 1-34 are pending. No claim amendment is made herein.

The specification has been amended to recite the priority applications under 35 U.S.C. §119 and §120. No new matter is added.

Claims 1-11 are rejected under 35 U.S.C. §102(b) as being anticipated by Nishibu et al., Analytical Biochemistry (2003) 319:88-95 ("Nishibu"). (Office Action, page 2)

The applicant has concurrently filed a Petition for Acceptance of an Unintentionally Delayed Priority Claim along with a reexecuted Declaration and for the reasons below believes this rejection to be moot.

The instant application claims benefit under 35 U.S.C. §119 and 35 U.S.C. §120 of two international applications: PCT/JP2004/000504 filed on January 21, 2004 and PCT/JP2005/000737 filed on January 21, 2005, both of which designate the United States. The effective US application date of PCT/JP2004/000504 is the international filing date of January 21, 2004. This date is within one year of Nishibu (August 1, 2003), therefore the rejection under 35 U.S.C. 102(b) does not apply.

On February 12, 2010, the Applicants submitted a verified translation of PCT/JP2004/000504.

In light of this reason, it is respectfully requested that the rejection be withdrawn.

Claims 1-5 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheley et al., Biotechniques (1991) 10(6):731-732 ("Cheley"), cited in the IDS filed July 22, 2008, in view of Jacobson, Electrophoresis (1990) 11:46-52, cited in the IDS filed July 13, 2006. (Office Action, page 5)

The Applicant asserts that because Jacobson indicates that SDS is not preferable for binding in nitrocellulose, the skilled artisan would not have motivation to modify Cheley's method with Jacobson. In the Response to Arguments on p.11-12 of the Office Action, it is alleged:

Jacobson, however, is relied upon in part to teach a PVDF membrane, not nitrocellulose. The combination of Cheley and Jacobson would therefore have

PVDF, not nitrocellulose, as the immobilizing membrane. Although PVDF and nitrocellulose are equivalent materials for the same function, Jacobson does not indicate that PVDF in the presence of SDS would cause a decrease in binding like nitrocellulose does. Indeed, based on Jacobson, the skilled artisan would not have recognized that SDS'S effect on protein binding to nitrocellulose would translate into the same type of binding in PVDF. Moreover, Jacobson describes PVDF as a membrane with good mechanical strength and that using methanol would increase binding...Accordingly, even if SDS did reduce binding with a PVDF membrane, ... the methanol would provide a counter to this decrease and the PVDF's mechanical qualities provide an incentive for using it as a protein substrate. One of ordinary skill in the art would therefore still have a reason to combine Jacobson with Cheley's method. (Office action p.10, line 15 to p.11, line 8).

The Applicant respectfully disagrees. Jacobson describes that PVDF and nitrocellulose are equivalent materials for the same function. Jacobson in fact indicates that it is preferable to bind protein to nitrocellulose membrane in the presence of methanol (P.47, left column, 3.1 Buffer composition, lines 4 to 6, p.48, Fig. 1). Therefore, the skilled artisan would logically understand from the disclosure that it is preferable to bind protein to PVDF membrane in the presence of methanol.

In contrast, Jacobson indicates that the binding (of protein) to nitrocellulose was lower in the presence of SDS (p.47, right column, lines 17 to 18, Fig.2b, p.49, right column lines 16 to 17,"SDS reduces the binding to nitrocellulose."). Therefore, while Jacobson does not indicate that PVDF membrane in the presence of SDS would cause a decrease in binding like nitrocellulose does, the skilled artisan would nonetheless understand from Jacobson that the binding of protein to PVDF membrane is lower in the presence of SDS, as well. Therefore, the skilled artisan would logically conclude that it is not preferable to bind protein to PVDF membrane in the presence of SDS.

Jacobson does not disclose the binding of protein to PVDF membrane in the presence of methanol and SDS. On the other hand, Jacobson indicates that,

...presumably by strengthening the hydrophobic interactions between protein and

membrane and by weakening the binding of SDS to protein (p.49, right column, line 7 to 10).

Again, the rejection alleges that:

...even if SDS did reduce binding with a PVDF membrane, the methanol would provide a counter to this decrease and the PVDF's mechanical qualities provide an incentive for using it as a protein substrate. The skilled artisan would therefore still have a reason to combine Jacobson with Cheley's method. (Office action, p.11, lines 3 to 8).

The skilled artisan would not logically understand to perform protein binding to PVDF membrane in the presence of SDS because the artisan knows that SDS reduces the binding of protein to nitrocellulose membrane from the disclosure of Jacobson, as alleged. Further, Jacobson does not indicate whether protein can be bound to nitrocellulose membrane as well (or better) in the presence of methanol and SDS, as in the presence of methanol only. Therefore, the assertion that "even if SDS did reduce binding with a PVDF membrane, the methanol would provide a counter to this decrease" has no logical basis in the art cited in the rejection. Thus, the skilled artisan would perform binding of protein in the presence of methanol only, but would not think to add SDS, because of the disclosures in the cited art.

Based on the rebuttal above, there is in fact no logical motivation to combine Cheley and Jacobson, and thus the combination of Jacobson with Cheley's method is impermissible hindsight.

Additionally, a protein in a sample in the presence of a surfactant cannot be immobilized efficiently by the conventional immobilization method as explained in [0015].

In contrast to this, by using the claimed invention, proteins can be immobilized to the solid-phase having hydrophobic surface in the presence of a lower alcohol, and a halogenocarboxylic acid and/or a long chain alkyl sulfate at a constant rate, even in the presence of SDS, which is unexpected based on the cited art.

In light of the unexpected results show in Table 3 of the instant specification for example, which are clearly not disclosed or suggested by the cited art, as explained above, the claimed invention is not *prima facie* obvious over the combination of Cheley and Jacobson.

The claimed invention simply has an *unexpected superior effect which the cited art teaches against*.

It is respectfully requested that the rejection be reconsidered and withdrawn.

Claims 6-7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheley in view of Jacobson, as applied to claim 1. (Office Action, page 7)

For the same reasons explained above, there is no motivation to combine Jacobson with Cheley, and the claimed invention has the above-described unexpected superior effect to the disclosure of Cheley and Jacobson.

It is respectfully requested that this rejection be reconsidered and withdrawn.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1105.

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Respectfully submitted,

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